



Using Agile Scrum to Achieve Superior Team Performance

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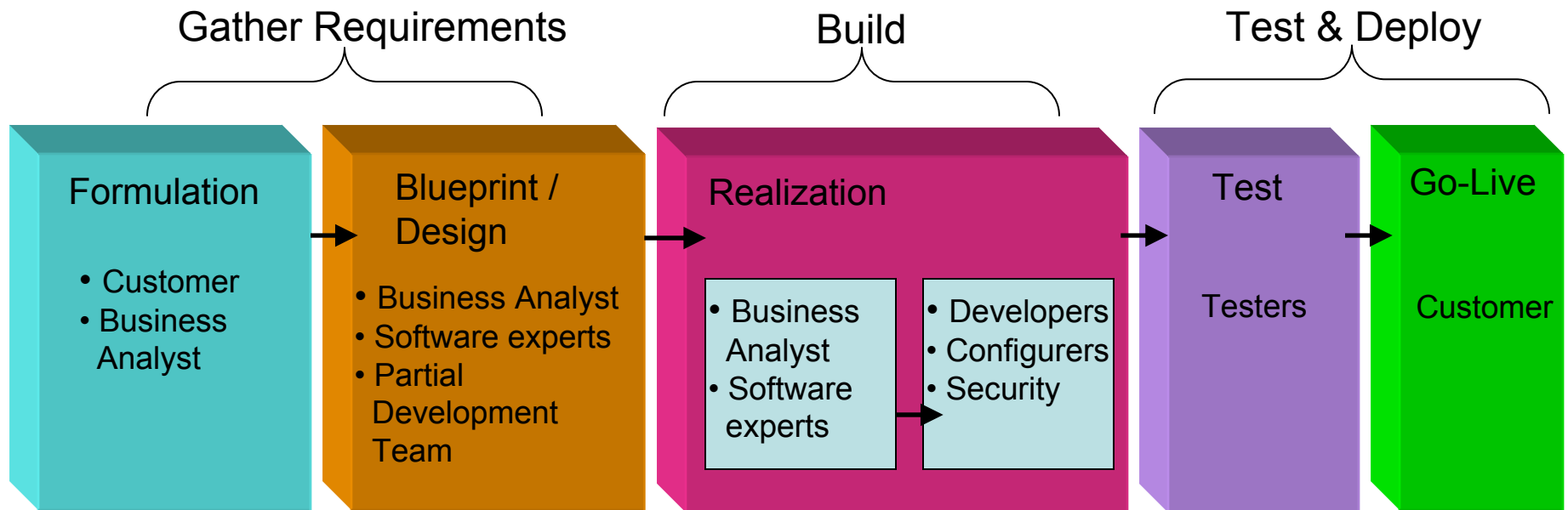
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What defines a High Performance Team?

- **High Performance Teams can:**
 - Build trust and interdependence
 - Focus on a set of common goals
 - Manage themselves effectively
 - Accomplish the entire scope of work by utilizing resources within the team
 - Understand their capacity for accomplishing work (velocity)
 - Ensure along the way that what they are building meets customer expectations
 - Consistently deliver high-value products

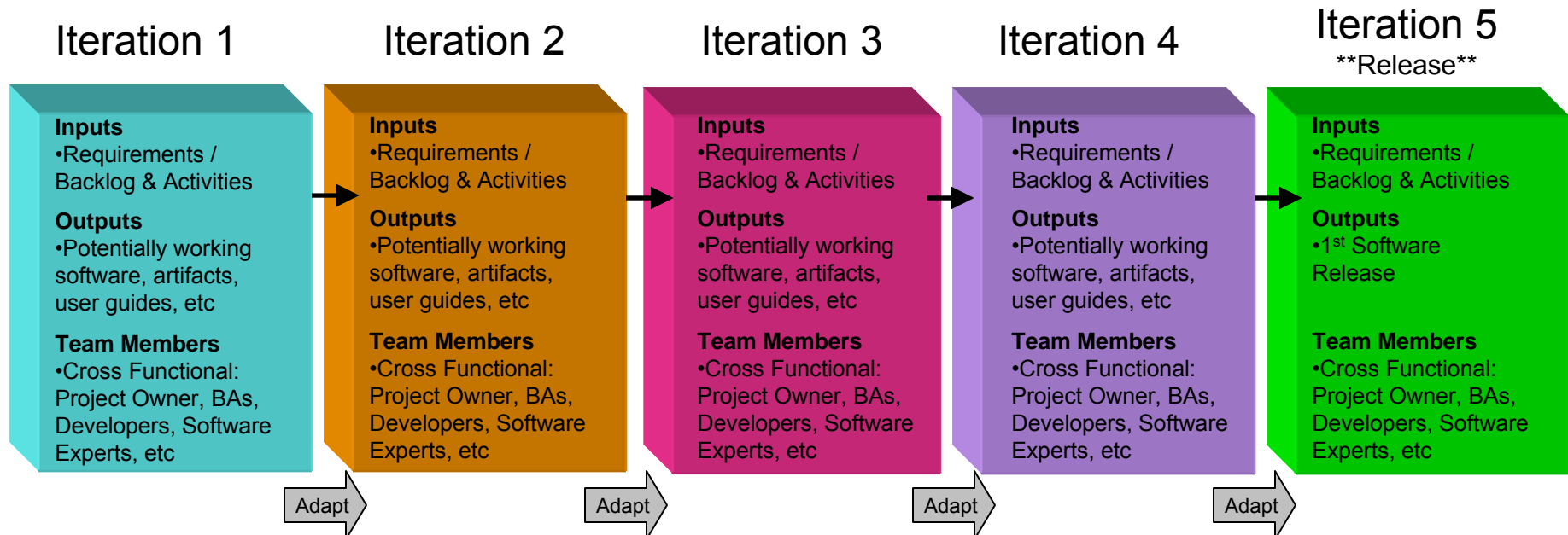


Teams in a Traditional Software Implementation Process



- Focus is on sequential (non-overlapping) phases
- 'Teams' divided up into areas of expertise to accommodate phases
- Each 'team' hands its work off to the others
- Limited interaction with customer
 - "Don't talk to the customer now. They might change a requirement"

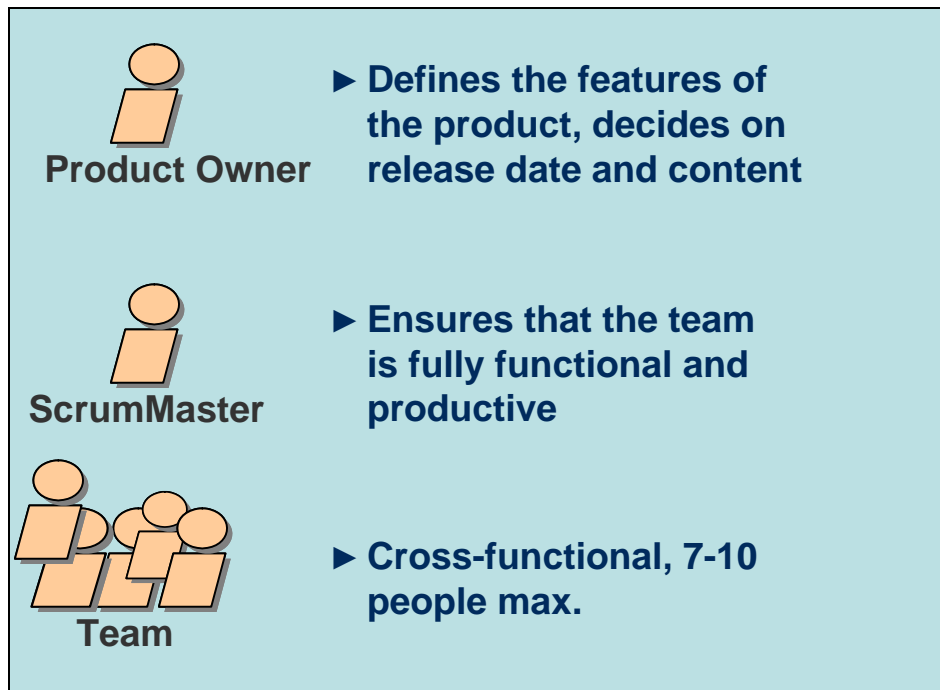
Teams in an Iterative Software Implementation Process



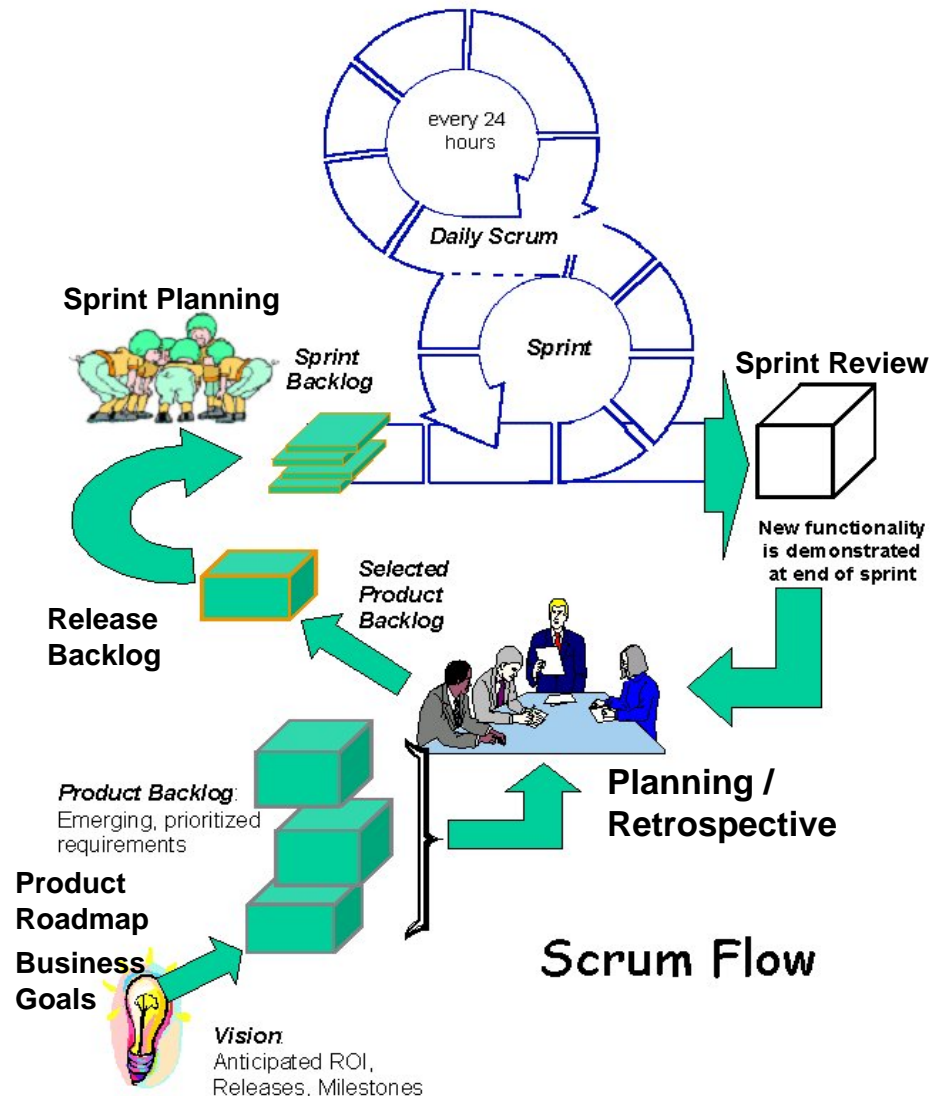
- Focus is on shorter lead time to produce working software
- Teams are cross-functional and typically remain the same across all iterations
- Collaboration of team members is necessary to achieve each iteration goal
- Close interaction with customer is needed
- ***A set of recognized practices exists to support this process!!***

What is Scrum?

- Name refers to a Rugby Scrum where adaptive team behavior moves a ball up the field toward a common goal
- A set of project management values and practices that cut through complexity to focus on building software with high business value



Scrum Workflow



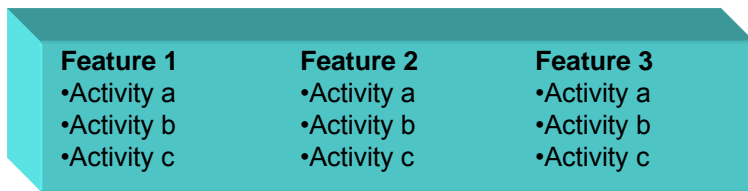
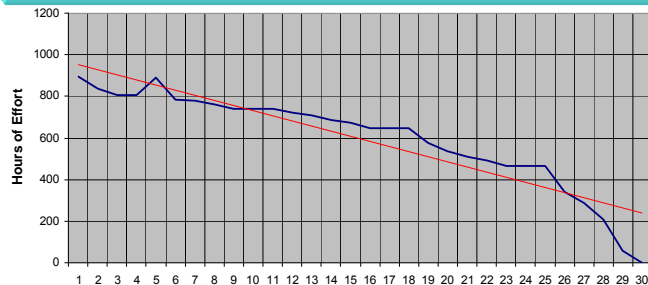
Key Practices

- Self-directed; self-organizing teams (preferably co-located)
- Iterative Adaptive planning
- Stakeholder/Customer Involvement
- 30-calendar day iterations
- 15 minute daily stand-up meeting
- Team measures progress daily
- Each iteration delivers tested, fully-functional software for demonstration
- Always 30-days from potential production release
- Iterative Retrospective Process
- Create a rhythm and flow

High Performance Teams using Scrum

Co-located Scrum Team:

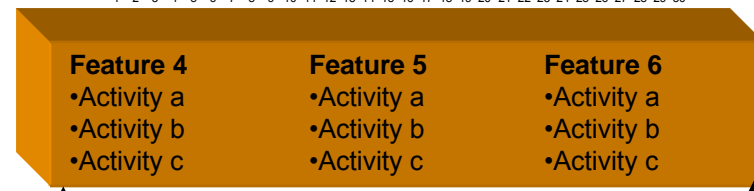
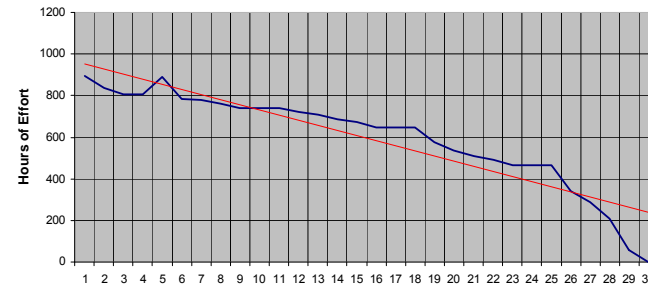
Product Owner, Scrum Master, Business Analysts, Software experts, Developers, Security, Testers, etc.



Sprint 1 (30 days)

Establish
Backlog

Working
Software &
Feedback



Sprint 2 (30 days)

Reprioritize
Backlog

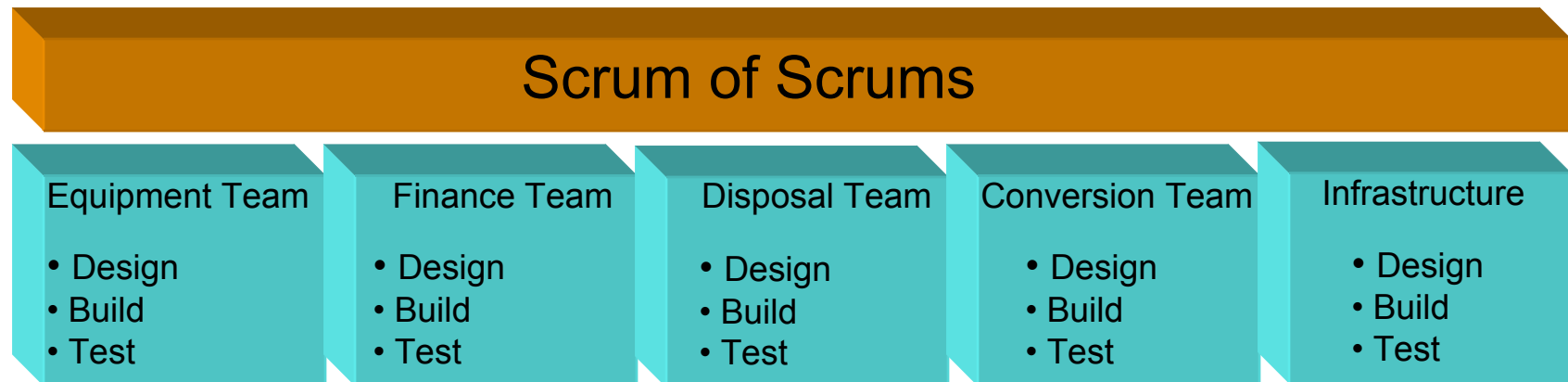
Working
Software &
Feedback

- Entire team commits to the work to be accomplished in each sprint
- Team encourages and thrives on continuous customer feedback
- Team measures its velocity over time and commits with confidence



Example Scrum Project at IEMP Competency Center

- **Integrated Asset Management / Property Plant & Equipment**
 - Vision: Improve NASA's ability to manage its property plant & equipment by providing a system that integrates logistics and financial accounting functions
 - 1 ½ year project duration
 - Configuration and Enhancement of SAP software
 - Custom development of two web applications
 - N-PROP for end user property management and browsing of available property
 - DSPL for managing the sale and disposal of items ready for excess



Steps We Took From the Start

- **Got buy-in for use of Scrum from Competency Center Director**
 - Change in culture is so drastic that you need to have commitment from top levels
- **Worked with Building Manager to create Scrum rooms**
 - Cubicles hinder open communication and teamwork
- **Engaged a 'Scrum Coach'**
 - Offered basic Scrum training
 - Provided training for Product Owners
 - Certified 30+ Scrum Masters
 - Coach continues to monitor teams periodically and suggest areas for improvement



Organizational Obstacles We Encountered

Part I

- **Difficulty in educating all teams on Scrum process and principles**
 - Takes a while for Scrum approach to sink in and override traditional thinking
- **Dominant personalities**
 - Some people can't give up the role of 'hero'
- **Timid Scrum Masters**
 - Scrum Master should be confident enough to confront destructive personalities, enforce team rules, and keep team focused
- **Destructive behaviors**
 - Not all people are willing to adapt to Scrum or be self-directed
- **Resource Pooling Limitations**
 - Planning and dedication of resources can be challenging due to operational support requirements



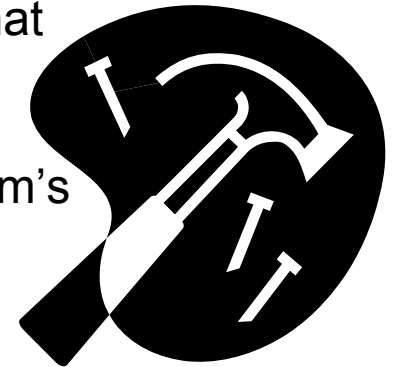
Organizational Obstacles We Encountered Part 2

- **Insufficient product backlog management**
 - Sketchy, 'geek speak' backlogs lead to miscommunication between team and customer
 - 'User stories' are the best method
- **Poor grasp of team velocity**
 - Team needs to track how much work they can accomplish in a sprint, otherwise they tend to over commit and deliver poor quality
- **Managers trained to micro-manage & lack trust**
 - Trust in employee judgment tends to be lacking in some cases – e.g., I need to double check Tim's estimates before he can commit to the team
- **Product Owner gap**
 - Uncertainly about who should fill Product Owner role
 - Customers want their software, but are not used to being asked to commit their own time to the implementation process

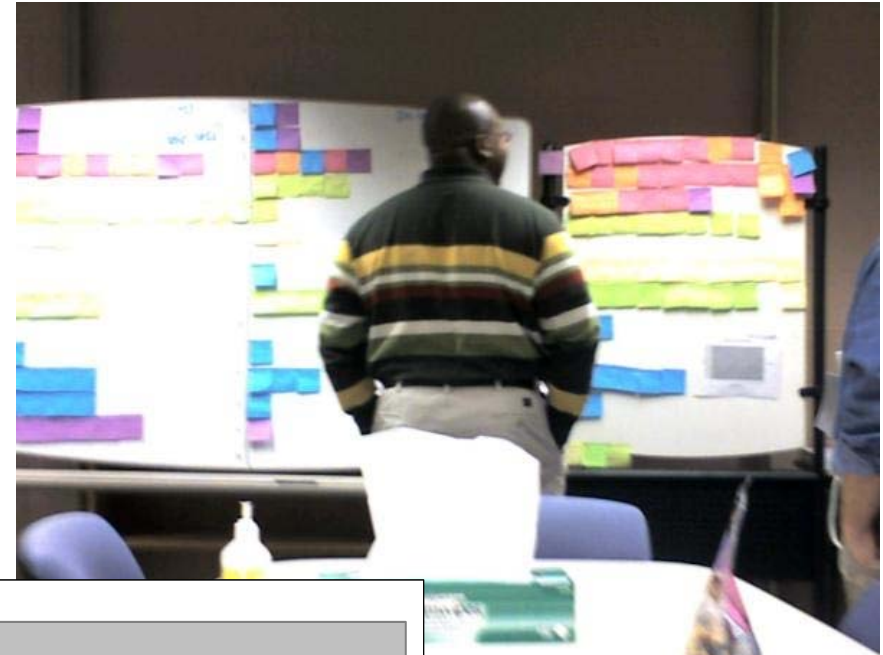
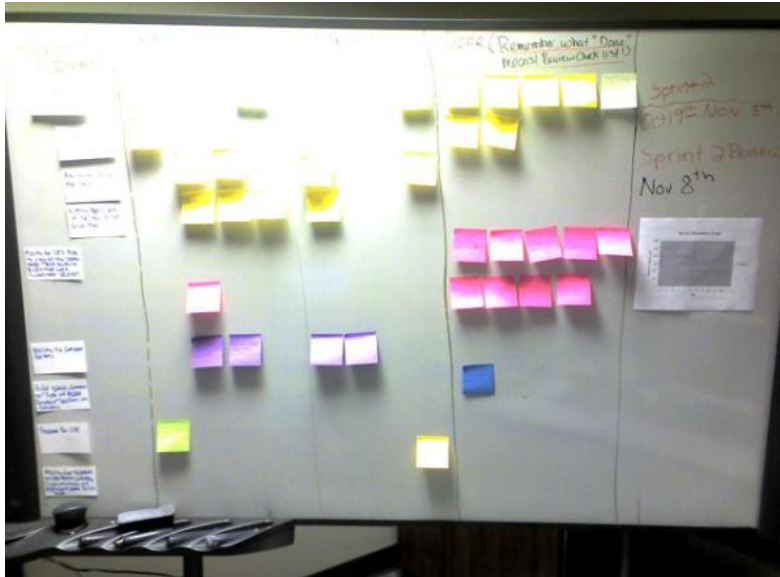


Steps We Took to Improve Team Performance

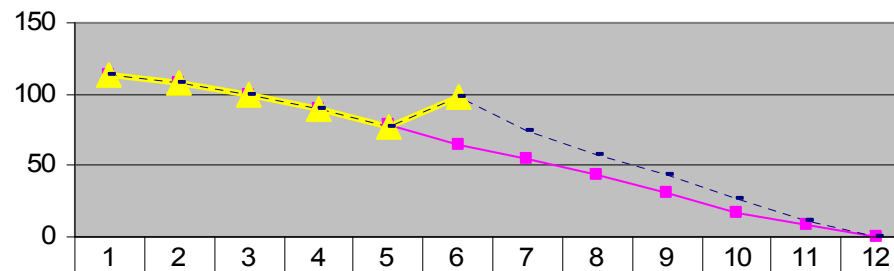
- **Empowered teams to revisit project schedule based on product backlog planning**
 - Replanning based on a more complete backlog showed that the team needed at least 6 additional sprints
- **Showed team that management respects velocity**
 - Management amended project schedule based on the team's velocity and projected completion date
- **Worked on developing user stories for the backlog**
- **Coached dominant team members and removed destructive ones**
- **Discontinued traditional project status meetings and other 'task monitoring' events**
 - Communicate via Scrum of Scrums and don't micro-manage
- **Tried to use 'Project Manager' to fill the Product Owner gap**
 - Project Manager is responsible for engaging Product Owner and also managing Product Owner expectations



Questions?



Backlog (Features)



	1	2	3	4	5	6	7	8	9	10	11	12
BL Planned - Remaining	113	108	99	90	78	64	54	43	31	17	9	0
BL Actual - Remaining	113	108	99	90	77	98						
BL Actual - Remaining Forecast	113	108	99	90	77	98	74	58	44	27	11	0

Sprint

**Scrum task boards
and Product
Burndown charts**

**We are still
improving the
process!**

Reference Sources

- **Agile Project Management with Scrum – Ken Schwaber**
- **Agile Estimating and Planning – Mike Cohn**
- **User Stories Applied: For Agile Software Development – Mike Cohn**



- <http://www.scrumalliance.org/>